

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	Original Issue	S.M.H.	10-99
2	Reinforcing	S.M.H.	7-01
3	Revise Reinforcing, General Update	S.M.H.	02-07
4	Revise Notes, General Update	S.M.H.	4-10



GENERAL NOTES:

Design Specifications - AASHTO LRFD Bridge Design Specifications, 4th Edition 2007.

All Concrete shall be Class "S" ( $f'c = 3,000$  psi).

All bends and hooks shall meet the requirements of AASHTO LRFD Article 5.10. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2 inch clear cover unless noted otherwise.

Chamfer all exposed corners  $\frac{3}{4}$ " unless noted otherwise.

Compact backfill for footing and wall base minimum  
95 percent of ASTM D698 maximum dry density.

See Project Plans for wall layout, top of footing and finished grade elevations, footing step and wall joint locations. Construction Joints shall match the locations of weakened plane joints. See Project Plans for wall surface treatment. Increase the wall thickness for any treatment depth greater than  $\frac{3}{4}$ ".

Pay item is measured as wall height H times length of wall, and pay item includes all labor and materials for excavation, backfill, concrete footing and wall with reinforcements.

Dimensions shall not be scaled from drawings.

Item No. 9140136 SOUND BARRIER WALL (CONCRETE)  
Measure: Square Foot

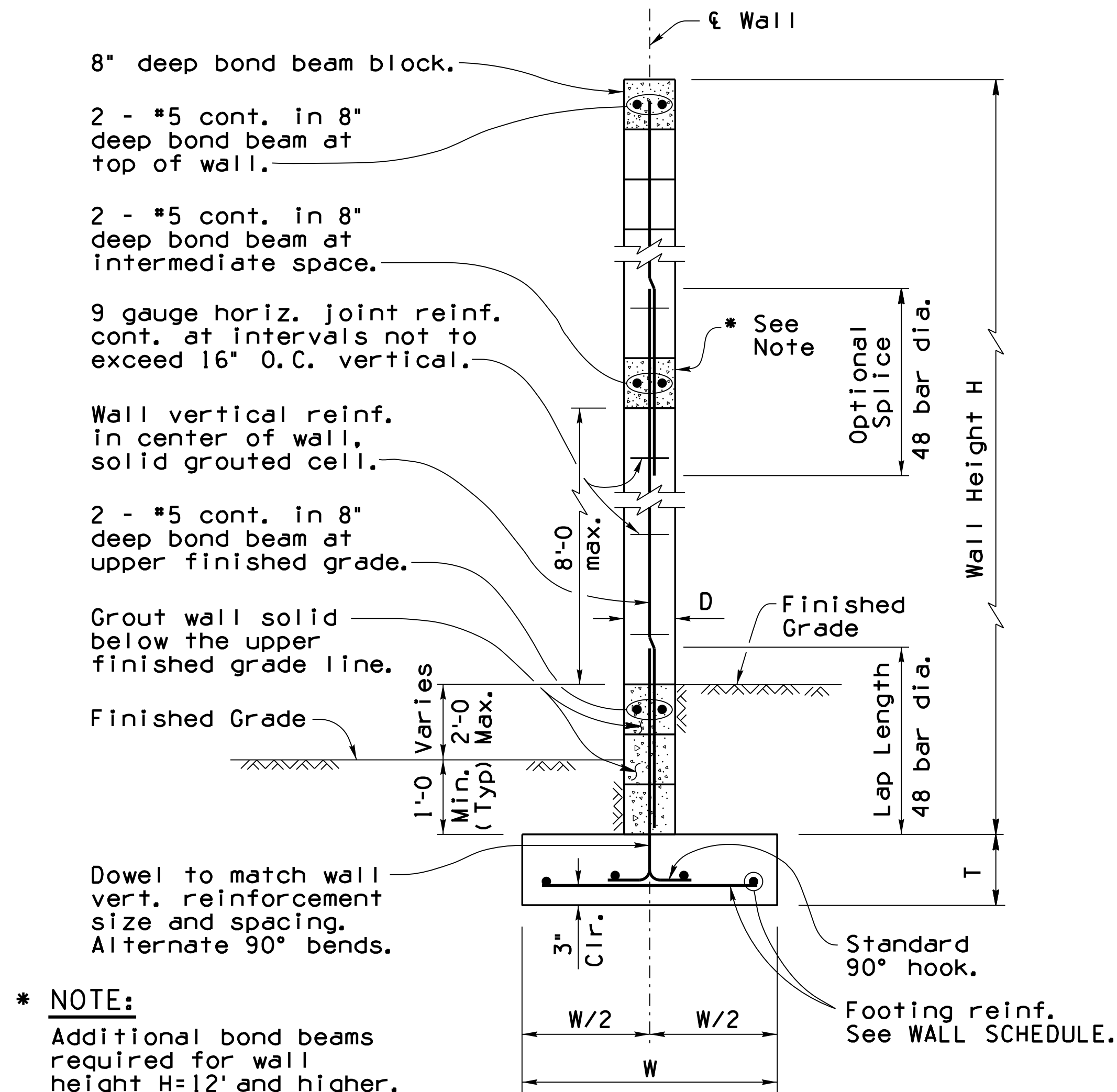


## FOOTING STEP DETAIL

DESIGN APPROVED <i>Shafi U. Hasan</i>		ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION BRIDGE GROUP STRUCTURE DETAIL	
APPROVED FOR DISTRIBUTION <i>Tean A. Nehme</i>		SOUND BARRIER WALL (CONCRETE)	
ROUTE	PROJECT NO.	FA NO.	DRAWING NO. <b>SD 8.01</b>
LOCATION			SHEET NO. <b>OF</b>

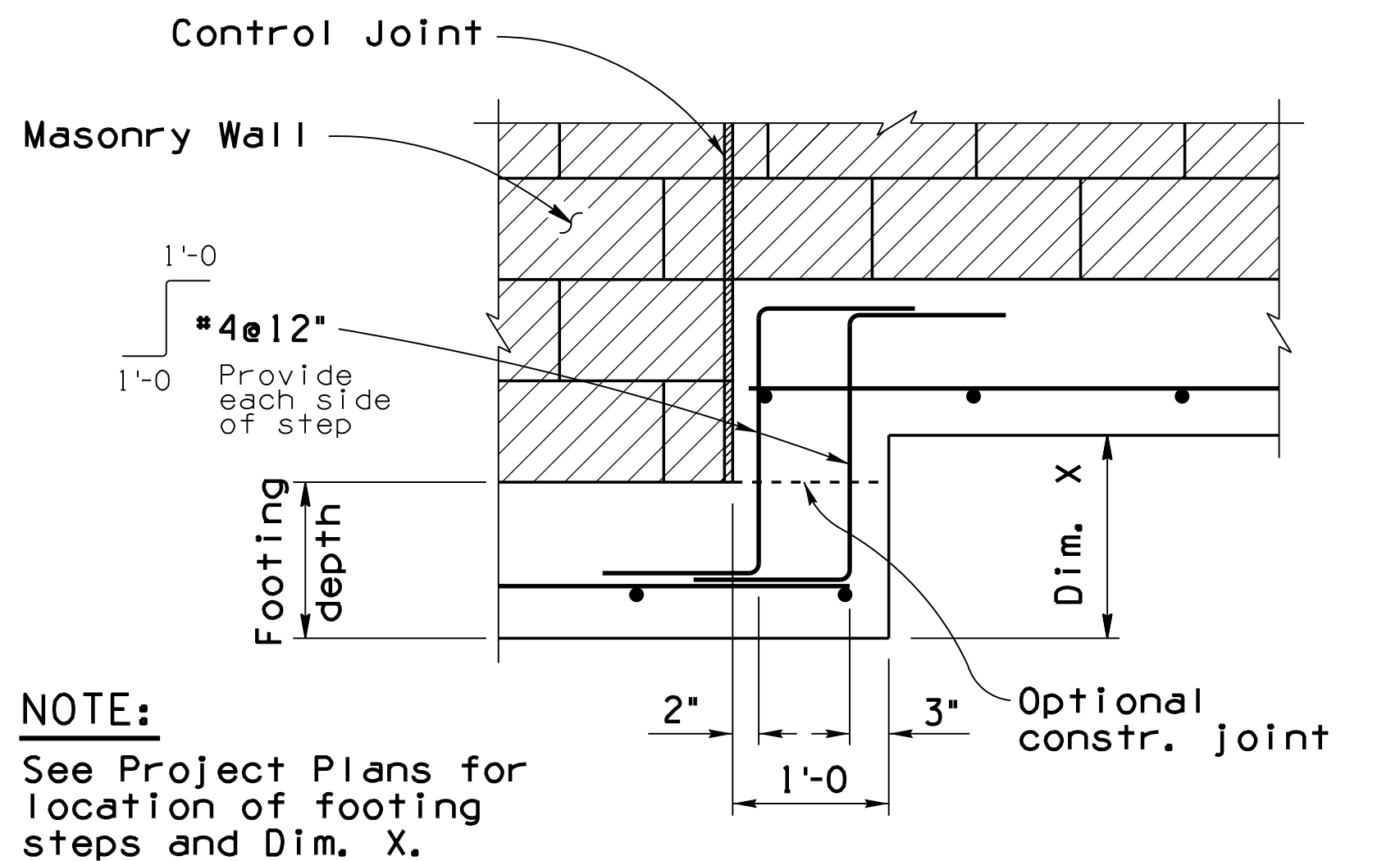
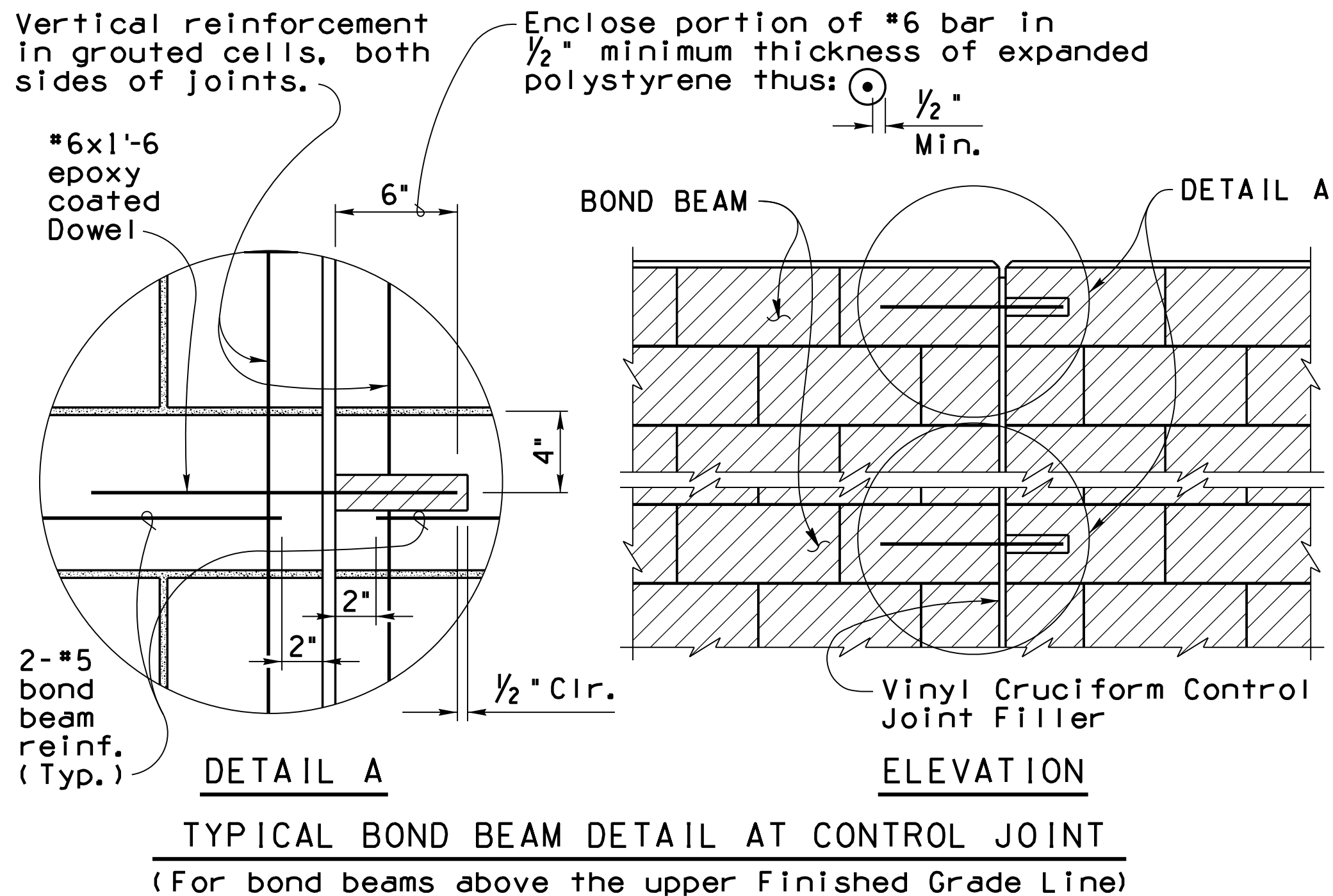
Note to Designer:  
The information presented in this Standard Detail has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.

NO.	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	Original Issue	SJH.	10-99
4	Revise Reinforcing, General Update	SJH.	02-07
5	Revise Notes, General Update	SJH.	4-10
6	Revise Detail at Wall Corner, Note	SJH.	01-13

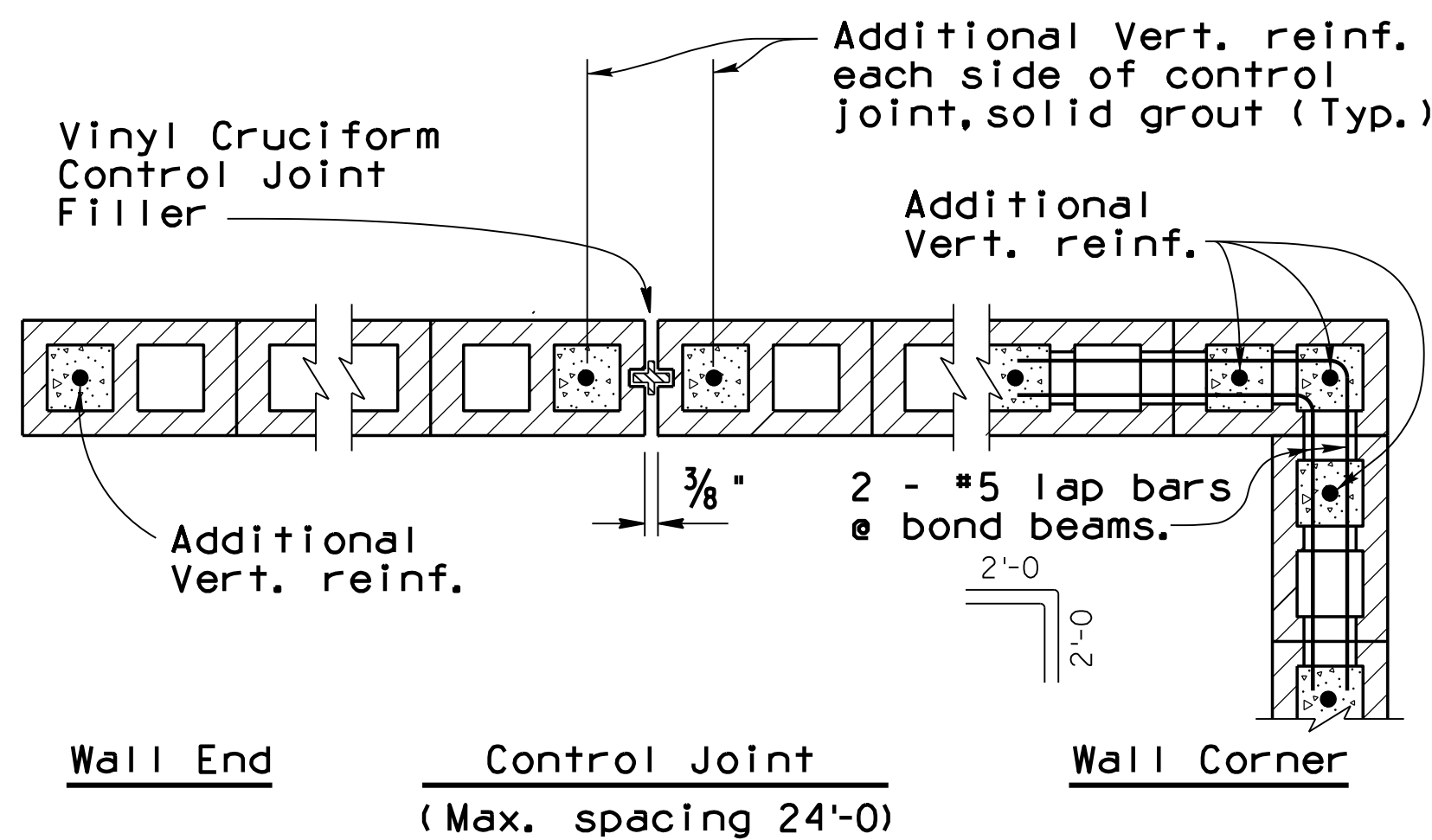


**\* NOTE:**  
Additional bond beams required for wall height H=12' and higher. Equally space bond beams at 8'-0 max.

**TYPICAL WALL SECTION**  
(For Wall Height 0'-0 to 17'-11)



**FOOTING STEP DETAIL**



**WALL DETAILS AT JOINTS AND ENDS**

**NOTE:**  
See DWG. SD 8.02 (2 of 2) "TYPICAL SECTIONS THROUGH VERTICAL WALL REINFORCEMENT" for similar details not shown here.

WALL SCHEDULE							
Wall Height H	Wall Thick D**	Ftg. Depth T	Ftg. Width W	Reinforcing***			Factored Average Soil Bearing Pressure (psf)
				Wall	Footing		
				Vert.	Bottom Trans.	Bottom Long.	
0'-0 to 3'-11	8"	10"	1'-6	*4#24"	*4#24"	2-#4	1,000
4'-0 to 5'-11	8"	10"	2'-0	*4#24"	*4#24"	2-#4	1,200
6'-0 to 7'-11	8"	10"	2'-6	*5#24"	*5#24"	4-#4	1,300
8'-0 to 9'-11	8"	10"	3'-0	*5#24"	*5#16"	4-#4	1,400
10'-0 to 11'-11	8"	1'-0	3'-6	*5#16"	*5#16"	4-#5	1,500
12'-0 to 13'-11	12"	1'-3	4'-6	*5#16"	*5#16"	6-#5	1,600
14'-0 to 15'-11	12"	1'-6	5'-0	*6#16"	*6#16"	6-#5	1,700
16'-0 to 17'-11	12"	1'-6	5'-6	*8#16"	*6#16"	6-#5	1,800

\*\* Nominal Dimension, \*\*\* Additional Reinf. required at Control Joints.

**GENERAL NOTES:**

Construction Specification - Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.  
ACI 530.1. Specifications for Masonry Structures.

Design Specifications - AASHTO LRFD Bridge Design Specifications, 6th Edition 2012.

Wind Velocity 80 MPH, Exposure C.  
Wind pressure 18.0 psf for wall height under 12'-0.  
Wind pressure 25.0 psf for wall height over 12'-0.

Special Inspection is required for all masonry wall construction. Vertical Cells containing reinforcements shall be grouted solid full height. Bond Beams with reinforcements shall be grouted solid full length.

All Concrete shall be Class "S" (f'c = 3,000 psi).

Reinforcing steel shall conform to ASTM Specification A615. All reinforcing shall be furnished as Grade 60 (fy = 60,000 psi).

All bends and hooks shall meet the requirements of AASHTO LRFD Article 5.10. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2 inch clear cover unless noted otherwise.

Compact backfill for footing and wall base minimum 100 percent of ASTM D698 maximum dry density.

See Project Plans for wall layout, top of footing and finished grade elevations, footing step and wall joint locations. Height of wall may vary ± 2 inches. Control joints shall occur at intervals not to exceed 24'-0. See Project Plans for wall surface treatment and type of block.

Pay item is measured as wall height H times length of wall, and pay item includes all labor and materials for excavation, backfill, concrete footing and masonry wall with reinforcements.

Dimensions shall not be scaled from drawings.

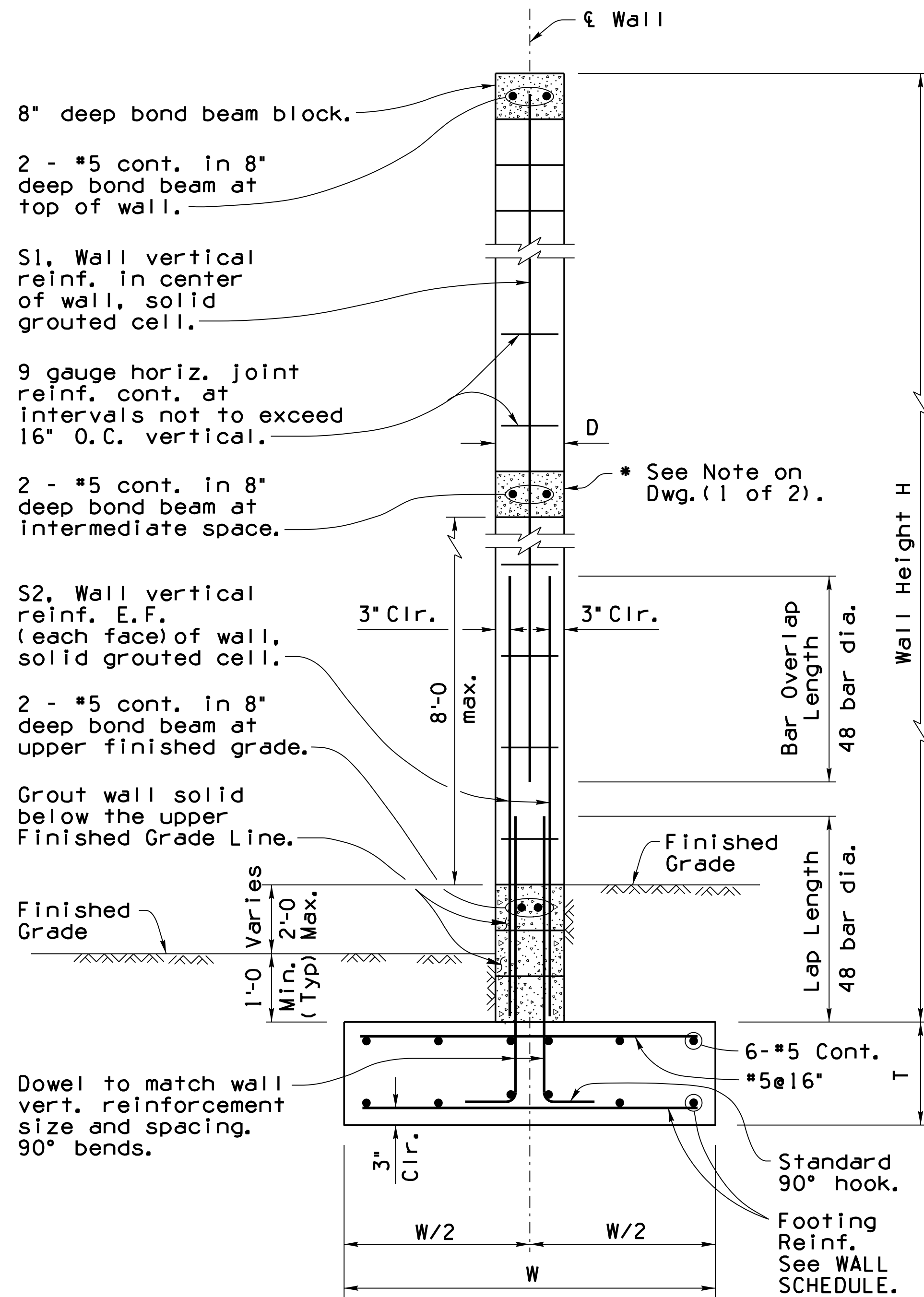
Item No. 9140137 SOUND BARRIER WALL (MASONRY)  
Measure: Square Foot

(GENERAL NOTES Continued Next Sheet)

DESIGN APPROVED <i>Shafiq U. Hasan</i>		ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION BRIDGE GROUP STRUCTURE DETAIL	
APPROVED FOR DISTRIBUTION <i>Teon A. Nehme</i>		SOUND BARRIER WALL (MASONRY)	
ROUTE	PROJECT NO.	FA NO.	DRAWING NO. SD 8.02 (1 of 2)
LOCATION			SHEET NO. OF

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NO.	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	Original Issue	H. Sung	4-03
2	Revised Reinforcing, General Update	H. Sung	02-07
3	General Update	S.W.H.	4-10
4	Added Details for Conn. to Conc. Wall and Wall Angle Point	S.W.H.	01-13



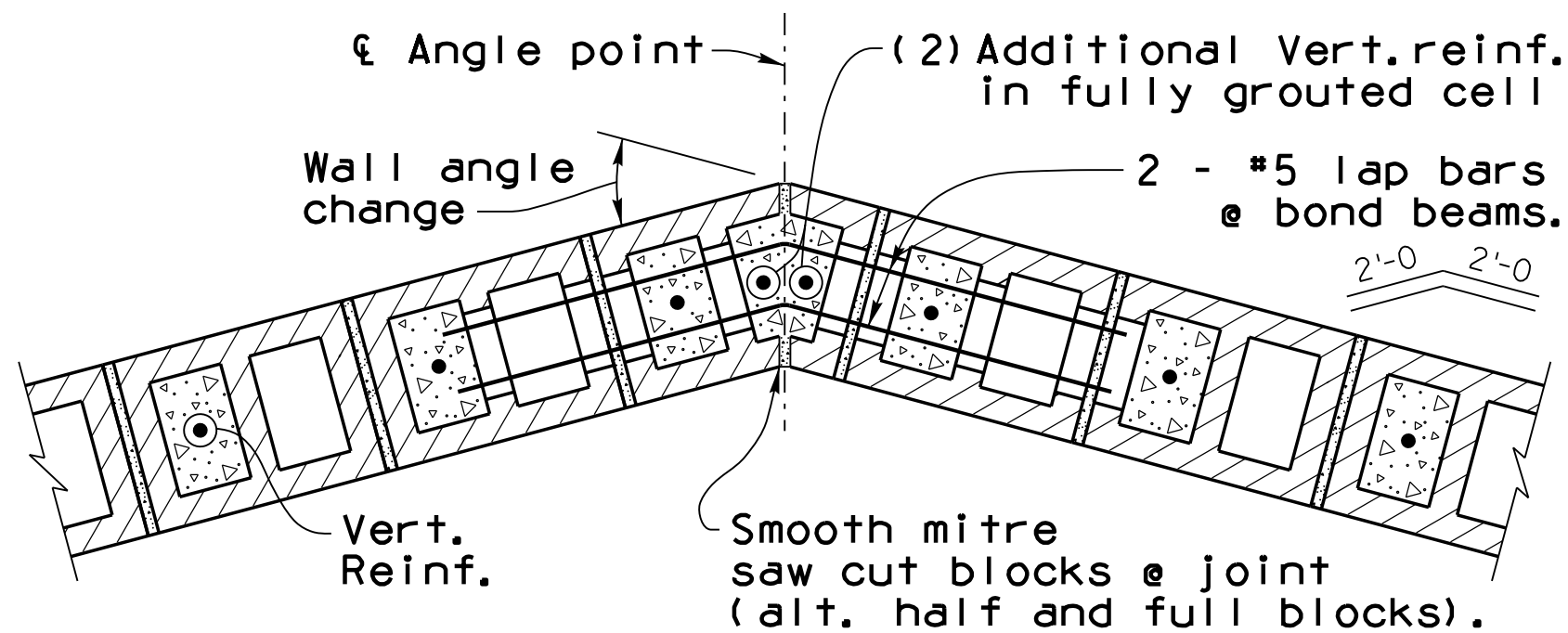
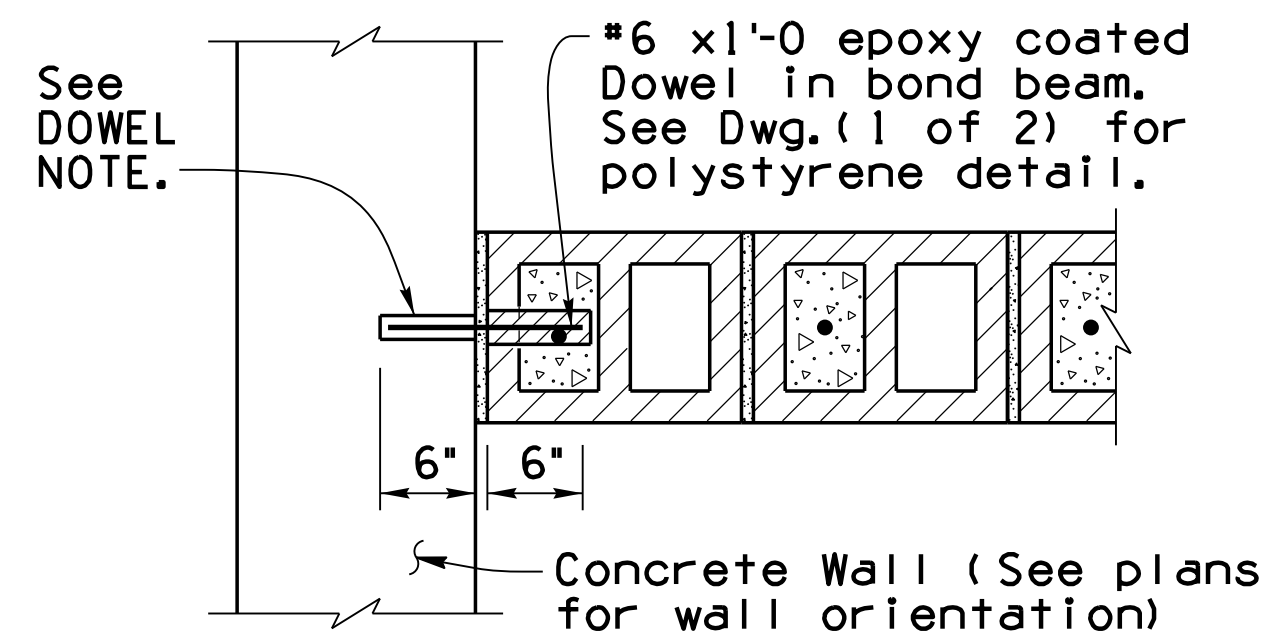
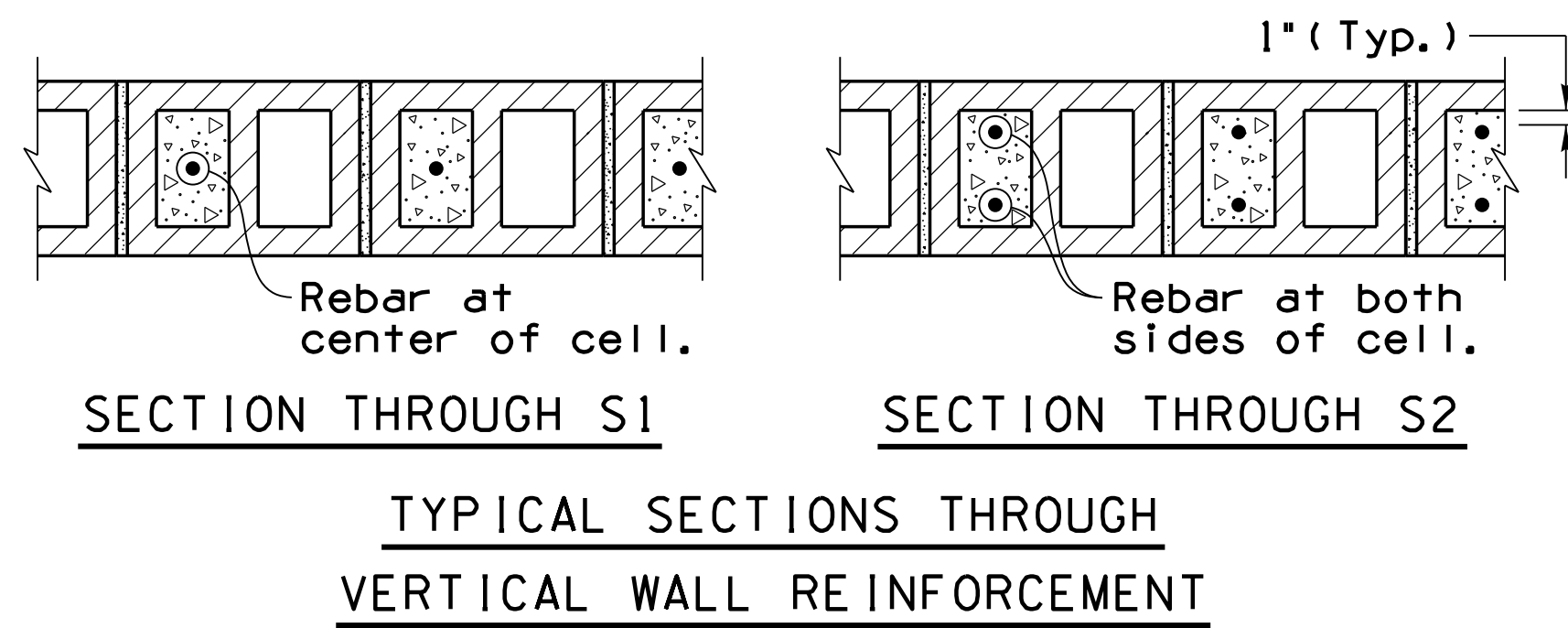
TYPICAL WALL SECTION  
(For Wall Height 18'-0 to 26'-0)

WALL SCHEDULE									
Wall Height H	Wall Thick D**	Ftg. Depth T	Ftg. Width W	Reinforcing***				Factored Average Soil Bearing Pressure (psf)	
				Wall, Vertical		Footing			
				S1	S2	Bottom Trans.	Bottom Long.		
				Size & Spacing	Size & Spacing E.F.				
18'-0 to 19'-11	12"	1'-9	6'-0	*5@16"	*5x6'-6 @ 16"	*6@16"	6- *5	1,900	
20'-0 to 21'-11	12"	2'-0	6'-3	*6@16"	*6x6'-6 @ 16"	*6@16"	6- *6	2,100	
22'-0 to 23'-11	12"	2'-3	6'-6	*8@16"	*6x7'-0 @ 16"	*6@16"	6- *6	2,300	
24'-0 to 26'-0	12"	2'-6	6'-9	*8@16"	*7x8'-0 @ 16"	*6@16"	6- *6	2,600	

\*\* Nominal Dimension, \*\*\* Additional Reinf. required at Control Joints.

NOTE:

See DWG. (1 of 2) WALL DETAILS AT JOINTS AND ENDS for details not shown here.



SECTION AT WALL ANGLE POINT

DOWEL NOTE:

Drill 1 inch diameter hole 6 inches deep for #6 dowel. Epoxy dowel in hole with an approved epoxy adhesive. Epoxy anchorage shall develop a tensile pullout strength of 13 kips. Details of the anchorage system shall be submitted to the Engineer for approval prior to installation.

GENERAL NOTES (Continued):

Materials Notes:

Masonry: f'm = 1500 psi, ASTM C90, Medium or Normal weight, Running Bond, SLUMP BLOCK unless noted otherwise.

Mortar: ASTM C270, Type S, Cube Strength 1800 psi, ASTM C91 cement.

Grout: ASTM C476, Type Coarse, Cube strength 2000 psi.

Reinforcing Steel: ASTM A615, Grade 60.

Joint Reinforcing: 9 Gauge Ladder or Truss type, Standard weight, fy=33,000 psi, ASTM A82 Wire.

Special Inspection Notes:

Special inspection and testing, provided by the Department, are required for the masonry noise wall stem to assure quality materials and construction.

(A) Pre-construction:

- 1) Verify correct block type to be used.
- 2) Verify correct mortar and grout to be used.
- 3) Verify the location, spacing, size and lap length of vertical reinforcing dowel bars and wall reinforcement that is within plus or minus 1/2" of the plan dimension as measured normal to the wall and plus or minus 2" in the longitudinal direction.
- 4) Verify that masonry units are clean and free from dirt when placed in the wall. Masonry units shall be dry before placement.

(B) Construction:

- 1) Observe, periodically, the placement of the masonry units and the making of the mortar. Verify that the initial bed joint thickness is not less than 1/4" or more than 1"; subsequent bed joints shall not be less than 1/4" or more than 5/8" in thickness.
- 2) Observe all grout placements.
- 3) Verify horizontal joint reinforcing size, location, and spacing.
- 4) Verify that all concrete masonry units are placed in uniform and true course, level and plumb with a tolerance of 1/4" in 8 feet, non-cumulative.
- 5) Verify that concrete masonry units are placed to the desired height with joints of uniform thickness. Level, plumb and straighten before the mortar stiffens. Bond shall be plumb throughout.
- 6) Verify that all concrete masonry units are cured by sprinkling twice a day for minimum of 2 days.

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ROUTE	PROJECT NO.	FA NO.	DRAWING NO. SD 8.02 (2 of 2)
LOCATION			SHEET NO. OF